

**REMARKS**

**Status Of Application**

Claims 13, 17 and 18 have been cancelled.

Claims 1-12, 14-16 and 19-37 are pending in the application; the status of the claims is as follows:

Claims 1, 3, and 9-12, 14-16 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,354,350 to Moore ("Moore").

Claims 1, 3, 7, 8, 11-12, 14-16, and 21 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,743,287 to Robinson ("Robinson").

Claim 37 is rejected under 35 U.S.C. § 102(b) as being anticipated by Moore or Robinson or U.S. Patent No. 3,111,404 to Karcher et al. ("Karcher et al.").

Claims 2, 4, 19, and 21-37 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore in view of U.S. Patent No. 3,024,098 to Austin et al. ("Austin et al.") and U.S. Application Publication No. 2002/0104347 to Sakamoto et al. ("Sakamoto et al.").

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore in view of Austin et al. and further in view of U.S. Patent No. 6,387,145 B1 to Miele et al. ("Miele et al.").

Claims 5-8 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Moore in view of Austin et al. and further in view of U.S. Patent No. 5,256,544 to Rogers et al. ("Rogers et al.").

Claims 1, 3, 9-12, and 14-16 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Karcher et al.

To date, no Notice of Draftsperson's Patent Drawing Review has been received. Applicant respectfully request receipts of this document when it becomes available. Please note that the original drawings filed in the patent application are "formal" drawings.

### **Claim Amendments**

Claims 21 and 33 have been amended to more particularly point out and distinctly claim the invention. These changes do not introduce any new matter.

### **35 U.S.C. § 102(b) Rejections**

Claims 1, 3, and 9-16 presently stand rejected under 35 U.S.C. § 102(b) as being anticipated by Moore. Because Moore fails to disclose all of the limitations of these claims, it is respectfully asserted that claims 1, 3, and 9-16 patentably distinguish over Moore.

Moore shows a method of preparing a slow releasing particulate solid iron humate agricultural nutrient composition, containing between 20 and 70 percent iron humate and between 30 and 80 percent chemically coreated divalent metal oxide (oxides of magnesium, manganese, zinc, copper, iron, cobalt, or calcium), hydroxide of a monovalent Lewis acid, and a water soluble inorganic phosphate.

In contrast to the cited reference, claim 1 includes:

A solid fertilizer composition comprising: a granular admixture of humate and a phosphate source which has been pressed together in a granular form, wherein the concentration of said humate is equal to or greater than 5% by weight of the final composition and the concentration of said phosphate source is equal to or greater than 5% by weight of the final composition, the balance being selected from the group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof.

Likewise, Claims 3, 11, 12, and 14-16 include “a solid fertilizer composition comprising a granular admixture” containing a percentage of a phosphate source above 5% by weight and a percentage by weight of humate or humic acid equivalent, “the balance being selected from the group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof.”

These limitations are not disclosed or suggested by Moore. Moore fails to teach or suggest a mixture of humate, phosphate and a “group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof.” Rather, as shown in Col. 6, line 55-59, Moore discloses a process of mixing iron humate, metal oxide powder and water soluble phosphate. Therefore, since Moore fails to teach all of the limitations of claims 1, 3, 11, 12, and 14-16, Moore cannot anticipate claims 1, 3, 11, 12 and 14-16, respectively, or claims 9-10 which depend from claims 1 and 3.

Accordingly, it is respectfully requested that the rejection of claims 1, 3, 9-12 and 14-16 under 35 U.S.C. § 102(b) as being anticipated by Moore, be reconsidered and withdrawn.

The rejection of claims 1, 3, 7, 8, 11-12, 14-16, and 21 under 35 U.S.C. § 102(b) as being anticipated by Robinson, is respectfully traversed based on the following.

Robinson shows a fertilizer and method wherein waste organic material is analyzed for certain inorganic chemicals (specifically Nitrogen, Phosphate, Potash, and Sulfur). Different major elements are added as needed based on this analysis. The constituents are mixed into a granular form after the addition of an acid or base as shown in Figure 1 of the reference. “[B]onding of the humic acid molecules to the added plant nutrients” is fostered from increased temperature and pressure.

In contrast to the cited reference, claims 1, 3, 11-12, and 14-16 include “a solid fertilizer composition comprising a granular admixture” containing a percentage of a

phosphate source above 5% by weight and a percentage by weight of humate or humic acid equivalent, “the balance being selected from the group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof.”

These limitations are not disclosed or suggested by Robinson. Robinson fails to teach or suggest a mixture of humate, phosphate and a “group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, and combinations thereof.” Rather, as shown in Col. 5, lines 22-27, Robinson discloses a process of elevating temperature and pressure “to further foster the bonding of the humic acid molecules to the added plant nutrients...” Therefore, since Robinson fails to teach all of the limitations of claims 1, 3, 11, 12, and 14-16, Robinson cannot anticipate claims 1, 3, 11, 12 and 14-16, respectively, or claims 7-8 which depend from claims 1 and 3.

Also in contrast to Robinson, claim 21 includes:

- A process for producing a granular fertilizer composition comprising:
- a. admixing a *humic acid* and a phosphate source while maintaining the temperature of the mixture below 100 degrees C; and
  - b. forming granules from said admixture by pressing said admixture together while maintaining the temperature of the admixture below 100 degrees C.

These limitations are not disclosed or suggested in Robinson. Robinson teaches that when mixing the materials “the temperature within the vessel will reach between 110° and 280° F.” However 280 degrees F equates to 137.78 degrees C, well above the 100 degree C limit set out in claim 21. Although the possible range of temperatures occurring in the process shown in Robinson overlaps the range required by claim 21, the claimed range “achieves unexpected results relative to the prior art range” and thus Robinson does not anticipate claim 21 because the “particular range is critical.” *In re Woodruff*, 919 F.2d 1575 (Fed. Cir. 1990); MPEP §2144.05. The specification explains that “an important aspect of the manufacturing process of the present invention is the maintenance of low temperature

during manufacture” (Specification pg. 16, lines 25-26). By maintaining the temperature below 100 degrees C, the optimal effectiveness of the Leonardite in the fertilizer composition is maintained. As further explained in the specification, an internal temperature above 100 degrees C “negatively impacts the humic acid contained in the humate component of the fertilizer compositions of the present invention and, therefore, significantly reduces the benefits of the humate” (Specification pg. 17, lines 3-5). This aspect of the invention was not anticipated by Robinson, and thus, claim 21 is patentably distinct over Robinson.

Accordingly, it is respectfully requested that the rejection of claims 1, 3, 7, 8, 11, 12, 14-16, and 21 under 35 U.S.C. § 102(b) as being anticipated by Robinson, be reconsidered and withdrawn.

The rejection of claim 37 under 35 U.S.C. § 102(b) as being anticipated by Moore or Robinson or Karcher et al., is respectfully traversed based on the following.

Karcher et al. shows a method for extracting humic acid from lignitic materials and/or recovering humic acid from its primary ores. Additionally, Karcher et al. shows adding phosphoric acid to a pulverized humic acid containing ore, along with anhydrous ammonia, to form a humic acid fertilizer. Karcher et al. shows subjecting the product to drying in order to obtain granular form.

Claim 37 is dependant upon claims 21, 24, 27, 30, and 33 and thus includes every limitation of those claims. Claims 21, 24, 27, 30, and 33 include “pressing said admixture together” in order to form granules. These limitations are not disclosed or suggested by Karcher et al. Thus, claims 21, 24, 27, 30 and 33 are not anticipated by Karcher et al. Likewise, dependent claim 37 is not anticipated by Karcher et al.

Claims 21, 24, 27, and 33 also include a process for producing granular fertilizer where the temperature of the mixture is maintained below 100 degrees C. Claim 30 includes a process for producing granular fertilizer where the temperature of the mixture is maintained below 80 degrees C. As noted above, these limitations are not disclosed or suggested in

Robinson. Robinson teaches that when mixing the materials “the temperature within the vessel will reach between 110° and 280° F.” However 280 degrees F equates to 137.78 degrees C, well above the 100 degree C limit set out in claims 21, 24, 27, 30 and 33. Although the possible range of temperatures occurring in the process shown in Robinson overlaps the range required by claims 21, 24, 27, 30 and 33, the claimed range “achieves unexpected results relative to the prior art range” and thus Robinson does not anticipate claims 21, 24, 27, 30 and 33 because the “particular range is critical.” *In re Woodruff*, 919 F.2d 1575 (Fed. Cir. 1990); MPEP §2144.05. The specification explains that “an important aspect of the manufacturing process of the present invention is the maintenance of low temperature during manufacture” (Specification pg. 16, lines 25-26). By maintaining the temperature below 100 degrees C, the optimal effectiveness of the Leonardite in the fertilizer composition is maintained. As further explained in the specification, an internal temperature above 100 degrees C “negatively impacts the humic acid contained in the humate component of the fertilizer compositions of the present invention and, therefore, significantly reduces the benefits of the humate” (Specification pg. 17, lines 3-5). This aspect of the invention was not anticipated by Robinson, and thus, claims 21, 24, 27, 30 and 33 are patentably distinct over Robinson.

In contrast to Moore, claims 21, 24, 27, 30 and 33 include a “process for producing a granular fertilizer composition” containing a given percentage of humic acid by weight and a phosphate source while maintaining a certain temperature. Moore does not show or suggest a fertilizer composed of a humic acid and a phosphate source. Instead Moore is limited to an iron humate. Since Moore fails to teach all the limitations of claims 21, 24, 27, 30 and 33, Moore cannot anticipate claims 21, 24, 27, 30 and 33. Likewise, dependent claim 37 is not anticipated by Moore.

Therefore, claim 37 is also patentably distinct from prior art.

Accordingly, it is respectfully requested that the rejection of claim 37 under 35 U.S.C. § 102(b) as being anticipated by Moore or Robinson or Karcher et al., be reconsidered and withdrawn.

**35 U.S.C. § 103(a) Rejections**

The rejection of claims 2, 4, 19, and 21-37 under 35 U.S.C. § 103(a), as being unpatentable over Moore in view of Austin et al. and Sakamoto et al., is respectfully traversed based on the following.

Austin et al. shows a fertilizer composed of an urea-formaldehyde compound (50-90%) and a phosphorous-containing compound (10-50%). A binding agent, such as methyl cellulose, starch, dextrine, alginates, sulfite spent liquor, or the like may be added to the mixture along with water.

Sakamoto shows a fertilizer containing a urea/aliphatic aldehyde condensation product and a sparingly water-soluble phosphatic fertilizer. When the form of the fertilizer is a particulate, the addition of water-repellent substances make it possible to control dissolution.

In contrast to the cited references, claim 19 includes:

A solid fertilizer composition comprising 70.95% humate by weight of the final product, 24.95% monoammonium phosphate by weight of final product, 4% iron oxide ore by weight of the final product, and about 0.1% carbohydrate-containing binding agent by weight of the final product.

As noted above, the level of humate in this claim limitation is beyond the level taught in Moore. Austin et al. and Sakamoto similarly do not show or suggest a 70.59% by weight level of humate. To support a *prima facie* case for obviousness, the references, singly or in combination, must show or suggest every limitation of the claim. MPEP §2143.03. The cited references do not support a *prima facie* case for obviousness of claim 19 and claim 19 is patentably distinct from the prior art.

Also in contrast to the cited references, claims 21, 24, 27, 30 and 33 include a “process for producing a granular fertilizer composition” containing a given percentage of humic acid by weight and a phosphate source while maintaining a certain temperature. The

cited references do not show or suggest a fertilizer composed of a humic acid and a phosphate source. Therefore, the cited references do not support a *prima facie* case for obviousness of claims 21, 24, 27, 30 and 33 and these claims are patentably distinct from the prior art. Additionally, claim 2 is dependent upon claim 1, claim 4 is dependent upon claim 3, claims 22-23 are dependent upon claim 21, claims 25-26 are dependent upon claim 24, claim 28 is dependent upon claim 27, claim 29 is dependent upon claim 24, 25, 26, 27 or 28, claim 31 is dependent upon claim 30, claim 32 is dependent upon claims 30 or 31, claim 34 is dependent upon claim 33, claims 35 and 36 are dependent upon claim 33 or 34 and claim 37 is dependent upon claim 21, 24, 27, 30 or 33 and, thus, include every limitation of their independent counterpart. Therefore, claims 2, 4, 22, 23, 25, 26, 28, 29, 31, 32, 34, 35, 36 and 37 are also patentably distinct from the prior art.

Accordingly, it is respectfully requested that the rejection of claims 2, 4, 19, and 21-37 under 35 U.S.C. § 103(a) as being unpatentable over Moore in view of Austin et al. and Sakamoto et al., be reconsidered and withdrawn.

The rejection of claim 20 under 35 U.S.C. § 103(a), as being unpatentable over Moore in view of Austin et al., and further in view of Miele et al., is respectfully traversed based on the following.

Miele et al. shows a fertilizer composition in the form of granules ranging between 0.1 and 1.5 mm consisting of an organic fraction (nitrogenous substance) and a mineral fraction (phosphate). Substances having a "biological action selected from a group consisting of microorganisms" may be added to the mixture.

In contrast to the cited references, claim 20 includes:

A solid fertilizer composition comprising 70.9% humate by weight of the final product, 24.9% monoammonium phosphate by weight of final product, 4% iron oxide ore by weight of the final product, about 0.1% carbohydrate-containing binding agent by weight of the final product, and 0.1% microorganism inoculant by weight of the final product.



As noted above, the cited references do not show or suggest a fertilizer composition comprising 70.9% humate by weight. Austin et al. and Miele et al. do not teach humates, while Moore teaches a fertilizer with iron humate comprising only “between 20 and 70 percent” by weight. Thus, the cited references do not support a *prima facie* case for obviousness of claim 20 and claim 20 is patentably distinct from the prior art.

Accordingly, it is respectfully requested that the rejection of claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Moore in view of Austin et al., and further in view of Miele et al., be reconsidered and withdrawn.

The rejection of claims 5-8, and 20 under 35 U.S.C. § 103(a), as being unpatentable over Moore in view of Austin et al., and further in view of Rogers et al., is respectfully traversed based on the following.

Rogers shows a process for solubilizing phosphate from phosphate containing ore by treatment with microorganisms.

As noted above, none of the cited references show or suggest a fertilizer composition comprising 70.9% humate. Thus, the cited references do not support a *prima facie* case for obviousness of claim 20 and claim 20 is patentably distinct from the prior art.

Claims 5 is dependent upon claim 3, claim 6 is dependent upon claim 4, claim 7 is dependent upon claims 1, 2, 3, 4, 5, or 6, and claim 8 is dependent upon claim 7. Because the independent claims from which the dependent claims stem are patentable in view of the cited references, claims 5-8 are also patentably distinct from the prior art.

Accordingly, it is respectfully requested that the rejection of claims 5-8, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Moore in view of Austin et al., and further in view of Rogers et al., be reconsidered and withdrawn.

**35 U.S.C. § 102(b) and 103(a) Rejection**

The rejection of claims 1, 3, 9, 10, and 11-12, and 14-16 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a), as obvious over Karcher et al., is respectfully traversed based on the following.

In contrast to the cited reference, claims 1, 3, 11, 12, and 14-16 include a “balance selected from the group consisting of binders, inoculants, plant nutrient sources, microorganism nutrient sources, iron, phosphate-solubilizing agents, chelating agents, coating agents and combinations thereof.” Karcher et al. does not show or suggest any such additions to the fertilizer produced by its method. Since Karcher et al. fails to disclose the limitations set out in claims 1, 3, 11, 12, and 14-16, Karcher et al. cannot anticipate claims 1, 3, 11, 12, and 14-16. Likewise, the cited reference does not support a *prima facie* case for obviousness of claims 1, 3, 11, 12, and 14-16 and claims 1, 3, 11, 12, and 14-16 are patentably distinct from the prior art.

Claims 9 is dependent upon claims 1, 2, 3, 4, 5 or 6. Claim 10 is dependent upon claim 9. Claims 1-6 are not anticipated by Karcher et al. and thus, claims 9 and 10 include every limitation of claims 1-6. Therefore claims 9 and 10 are also patentably distinct from the prior art. Additionally, claims 9 and 10 include a phosphate source of monoammonium phosphate. Karcher et al., does not show or suggest such a phosphate source. The phosphate source in Karcher et al. is specifically orthophosphoric acid. Thus, Karcher et al. cannot anticipate claims 9 and 10. Likewise, the cited reference does not support a *prima facie* case for obviousness of claims 9 and 10 and claims 9 and 10 are patentably distinct from the prior art.

Accordingly, it is respectfully requested that the rejection of claims 1, 3, 9, 10, and 11, 12, and 14-16 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a), as obvious over Karcher et al., be reconsidered and withdrawn.

**CONCLUSION**

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin LLP Deposit Account No. 18-1260.


If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee,

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and not submitted herewith should be charged to Sidley Austin LLP Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

By:   
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Douglas A. Sorensen  
Registration No. 31,570  
Attorney for Applicant

DAS/JLJ/llb  
SIDLEY AUSTIN LLP  
717 N. Harwood, Suite 3400  
Dallas, Texas 75201  
Direct: (214) 981-3482  
Main: (214) 981-3300  
Facsimile: (214) 981-3400  
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